

DESCRIPTION

The work shall consist of furnishing and installing polyvinyl chloride sanitary sewer pipe, manholes, laterals, with appurtenances, repairing existing manhole inverts and benches, in addition to removing existing pipe and manholes.

MATERIALS

Materials shall conform to the special notes, plans and details provided.

CONSTRUCTION DETAILS

Pipes and manholes are to be installed to the lines and grades, and in accordance with the details shown on the plans.

MANHOLE

Before placing the precast manhole, foundation bedding aggregate shall be placed and compacted per contract details.

Inverts may be precast by the manufacturer or installed in the field. Inverts formed in the field shall be constructed of sewer brick or half sections of sewer pipe. Care shall be exercised in forming inverts to give proper slope and shape to each channel as detailed. Bench walls shall be constructed of sewer brick and bench filled with plain concrete. Bench shall have a slope of 4%. All precast invert and bench work shall receive a protective epoxy coating.

Pipe entering or leaving new precast manholes shall be placed in the precast gasketed openings provided at the proper invert elevation. The space between the rubber gasket and the concrete manhole (interior and exterior) shall be grouted in place with an approved non-shrink grout. The exterior grouting shall be coated with a bitumastic coating (minimum 0.4mm dry thickness). Pipe entering the exiting manholes shall have joints not to exceed 1.8 meters from the exterior wall of the manhole.

Joints shall be rubber gasketed and shall fit snugly all around to form a weathertight joint. All spaces in the joints (interior and exterior) shall be filled with a flexible joint sealer and coated with a bitumastic coating (minimum 0.4mm dry thickness).

Precast top sections shall be either tapered or eccentric cone (when the depth to invert is greater than 2.1 meters or slab tops (when the depth to invert is less than 2.1 meters). Flat slab tops shall have a minimum thickness of 150mm for 1.2 meters manholes and 200mm for larger diameters with additional steel reinforcement around openings per ASTM C478. The top slab (or eccentric cone) manhole opening diameter shall match the frame base inside diameter. Vertical pipe sections shall be cast in such lengths that the precast roof slabs or tapered cone sections shall not be more than 375mm below finished surface grade and a minimum height of 0.9 meters clear from bench to underside of roof slab is provided.

Precast grade rings set in mortar may be used to bring manhole frame elevation. Manhole frames shall be flush with the grade unless directed otherwise by the Engineer. Adjusting rings shall not exceed 200mm in height. All manhole frames shall be set in mortar. The concrete adjusting rings and manhole shall be coated with a bitumastic coating (minimum 0.4mm dry thickness) to prevent water infiltration (interior and exterior).

PIPE

All pipes, fittings and joint material shall be thoroughly inspected by the Engineer prior to installation. Any material found to be defective in manufacture or damaged in handling shall be removed immediately from the work site, and new material of acceptable quality shall be furnished by the Contractor.

All joints shall be installed in accordance with the manufacturer's recommendations. The contractor shall provide the Engineer with a copy of the manufacturer's instructions for installing joint material, at least two weeks prior to installation.

Any pipe or fittings damaged during installation shall be replaced at extra costs to the Department.

LATERALS

For new sanitary sewer main, install SDR-35 wye and provide required pipe to connect to existing lateral.

EXISTING MAIN IMPROVEMENTS

Excavate the existing main at the intersection of Titus Avenue/Ellinwood Drive as shown on plans and provide new pipe from the existing damaged pipe northerly.

DYE TESTING

The Contractor, using a dye test, shall verify that the existing sanitary sewer laterals along Titus Avenue within the limits of Bouckhart Avenue to Larkspur Lane are connected to the live sanitary sewer main and not the existing abandoned main.

METHOD OF MEASUREMENT

The quantity to be paid for under this Item shall include the following: linear meters (laying length) of sewer pipe, manholes, testing, excavation embankment, laterals and fittings, repair of existing manhole inverts and benches, repair of existing sewer pipe, removal and excavation of existing manhole and pipes, bedding of new pipe and manholes.

BASIS OF PAYMENT

The lump sum bid shall include the cost of all labor, materials, and equipment to complete

ITEM 660.97M**SANITARY SEWER IMPROVEMENTS**

the work. Excavation and backfill shall be included under this item.

Payment will be made under:

<u>Item No.</u>	<u>Item</u>	<u>Pay Unit</u>
660.97M	Sanitary Sewer Improvements	M